

# A new combination in *Dendrocnide* (Urticaceae) in north Queensland

B.R. Jackes<sup>1</sup> and M. Hurley<sup>2</sup>

## Summary

Jackes, B.R. & Hurley, M. (1997). A new combination in *Dendrocnide* (Urticaceae) in north Queensland. *Austrobaileya* 5(1): 121–123. *Laportea cordifolia* L.S.Sm. from the Atherton Tableland is reinstated as *Dendrocnide cordifolia* (L.S.Sm.) Jackes & Hurley. *Dendrocnide cordata* (Warb. ex H.J. Winkl.) Chew is recognised as a separate species occurring on northern Cape York Peninsula. A key to the Australian species of *Dendrocnide* is provided.

Keywords: *Urticaceae*, *Dendrocnide*, *Dendrocnide cordata*, *Dendrocnide cordifolia*, *Laportea cordifolia*.

B.R. Jackes<sup>1</sup>, Co-operative Research Centre for Tropical Ecology and Management, Department of Tropical Plant Sciences, James Cook University of North Queensland, Townsville Queensland 4811 Australia.

M. Hurley<sup>2</sup>, Faculty of Environmental Studies, Griffith University, Nathan Campus, Queensland 4111 Australia.

## Introduction

A study of herbivory (M. Hurley) on several populations of *Dendrocnide* species occurring on the Atherton Tableland, north Queensland, indicated that not all the names currently in use for this genus could be applied with confidence. According to the *Flora of Australia* treatment by Chew (1989), the following species occur in this area; *Dendrocnide cordata* (Warb. ex H.J. Winkl.) Chew, *D. moroides* (Wedd.) Chew and *D. photinophylla* (Kunth) Chew. Chew (1969, p58) included *Laportea cordifolia* L.S.Sm. (as *L. cordatifolia*) under *Dendrocnide cordata*. Seeds were collected from the different taxa of *Dendrocnide* occurring in the Wongabel State Forest, approximately 6 km SW of Atherton (17° 17'S, 145° 28'E) and grown to maturity in a shadehouse at the James Cook University of North Queensland campus. Flowering and fruiting material was then compared with herbarium specimens.

The type of *L. cordata* was collected in the lowland area of the Sepik River at Constantinhafen (*Hollrung* 513; BO, K, MEL), whilst the type of *L. cordifolia* was collected near Atherton at an altitude of 1000 m

(3600 ft.) (*Smith* 10132; BRI). An examination of specimens held in the Queensland Herbarium (BRI) and Atherton (QRS) indicated that the taxon represented by *Hollrung* 513 occurs only in lowland situations. A specimen collected from the West Claudie River, 10.3 km WNW of Lockhart River Vacant Crown Land (AQ 631774) is the only Australian specimen seen which appears similar to the type of *L. cordata*. *L. cordifolia* appears to occur only on the Atherton Tableland. Smith (1959) stated that "It [*L. cordata*] differs [from *L. cordifolia*] in being a large tree with less compressed fruits and 5-nerved leaves which are more hairy beneath"; however, an examination of both herbarium material and the types of both names has shown that the two taxa may be distinguished from each other by a number of characters, not least being the structure of the inflorescence (Table 1). Hence we propose that *L. cordifolia* should be reinstated with a new combination under the genus *Dendrocnide*. In the course of this study, a number of variant populations of *D. moroides* were also recognised and this variation was confirmed by a study of herbarium specimens; however, further collections need to be made and studied, including breeding studies, before any groups can be formally recognised.

## Taxonomy

**Dendrocnide cordifolia** (L.S.Sm.) B.R.Jackes & M.Hurley, **comb. nov.**

*Laportea cordifolia* L.S.Sm., Proc. Roy. Soc. Queensland 70:31 (1959). **Type:** c. 4 miles (6.4 km) SW of Atherton, Qld., 4 September 1957, *L.S.Smith* 10132 (holo: BRI [AQ24367]).

**Selected specimens:** COOK DISTRICT: S.F.R. 185 Danbulla, Emu L.A., Sep 1992, *Hyland* 14553 (QRS); S.F.R. 198, Crater area, Jan 1982, *Stocker* 1796 (QRS).

All inflorescences examined were monoecious, although the male flower which terminated the first division of the dichasium often aborted leaving a small scar. At maturity the pedicellate male flower was held above the lateral branches bearing the female flowers. It was noted that the anthers dehiscid explosively. In response to changes in moisture levels the 3 mm long staminal filament uncoiled from under the hooded tepal, the anther thecae split and pollen was released over everything in the vicinity. The short filament (<1 mm long) in *D. moroides* as well as the short pedicel (av. 0.25 – 0.5 mm long), which results in the male flower not being held above the female flowers at maturity, suggests that such a mechanism does not operate in this species.

**Conservation status:** This species is not considered threatened.

**Dendrocnide cordata** (Warb. ex H.J.Winkl.) Chew. **Type:** Sepik River, New Guinea, *K.Hollrung* 513 (iso: BO, K, MEL [MEL 8911])

**Australian specimen seen:** COOK DISTRICT: West Claudie River, 10.3 km WNW of Lockhart River Vacant Crown Land, Mar 1994, *Fell* DGF4155, *Stanton & Claudie* (BRI [AQ631774]).

No scars representing the abscission of the male flowers were apparent on the *Fell* et al. specimen which suggests that the inflorescence is dioecious. The inflorescence is quite open and similar to that illustrated by Chew (1969, p59) for *D. cordata*. Unfortunately no descriptions of the fruit colour have as yet been recorded in the literature but field notes associated with two collections from Kanosia (Papua New Guinea) held at Kew record the fruit as white (*Darbyshire* 629 and *Carr* 11207). The Australian specimen differs from the type in that its leaf is not prominently 5-veined at the base and although the serrations on the margin are irregular on some leaves, they are not as marked as on the type.

**Conservation status:** Insufficiently known.

**Table 1. Comparison of morphological characters for *Dendrocnide cordata*, *D. cordifolia* and *D. moroides*.**

Character	<i>D. cordata</i>	<i>D. cordifolia</i>	<i>D. moroides</i>
margin	irregularly dentate	dentate/denticulate	dentate/denticulate
base	cordate	cordate	peltate
colour of fruit	white	greenish/white	red/purple
inflorescence	open	compact	open
sexuality of inflorescence	dioecious	monoecious	monoecious rarely dioecious
length of inflorescence	5–6 cm	2–2.25 cm	5–15 cm
stipules	1.5–2 mm	1–1.5 mm	1 mm
achenes	2 × 1.5 mm	1.6 × 1.2 mm	2 × 1.5 mm

NB. Inflorescence measurements taken as far as could be ascertained at a similar stage of maturity.

**Key to the Australian species of *Dendrocnide*** (modified from Chew, 1989)

- 1. Leaves glabrous or with hairs on veins on lower surface only . . . . . 2  
     Leaves hairy on both surfaces . . . . . 3
- 2. Leaf blade narrowly elliptic; base strongly cuneate; apex acuminate to  
     attenuate; hairs, if present, confined to midrib on the lower surface of the  
     leaf blade . . . . . **D. corallodesme**  
     Leaf blade elliptic to ovate, base broadly cuneate to rounded; apex  
     shortly acuminate . . . . . **D. photinophylla**
- 3. Leaves peltate . . . . . **D. moroides**  
     Leaves not peltate . . . . . 4
- 4. Inflorescence monoecious, compact; leaf margins regularly dentate/  
     denticulate. . . . . **D. cordifolia**  
     Inflorescence dioecious, open; leaf margins various but not regularly dentate/  
     denticulate. . . . . 5
- 5. Leaf blade usually densely woolly on the lower surface but sometimes  
     restricted to the sinuses; basal lobes usually overlapping. . . . . **D. excelsa**  
     Leaf blade not densely woolly on lower surface; basal lobes not overlapping  
     . . . . . **D. cordata**

**Acknowledgements**

We wish to thank the directors of the herbaria at BRI and QRS for access to herbarium material and to Colleen Finney for her assistance in nurturing the plants from seedling to maturity.

**References**

CHEW W.L. (1969). A monograph of *Dendrocnide* (Urticaceae). *Gardens Bulletin Singapore*. 25:1-104.

— (1989). *Urticaceae*. In A.S.George (exec.ed.). *Flora of Australia*. 3:73-79. Canberra: Australian Government Publishing Service.

SMITH L.S. (1959). *Urticaceae*. In 'New Species of and Notes on Queensland Plants' IV. *Proceedings of the Royal Society of Queensland* 70 (5):31-32.